Australian College of Veterinary Scientists

Membership Examination

June 2011

Small Animal Medicine

Paper 1

Perusal time: **Fifteen (15)** minutes

Time allowed: **Two (2)** hours after perusal

Answer your choice of any **FOUR (4)** questions from the five questions **ONLY**

All five main questions are of equal value

In some questions you must choose which subparts to answer

Answer **FOUR** questions each worth 10 marks .... total 40 marks
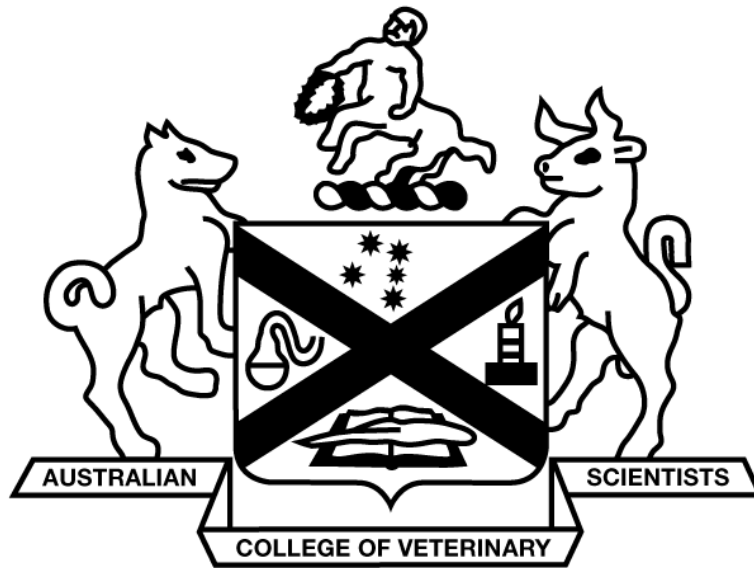
Paper 1: Small Animal Medicine

Answer your choice of any <u>FOUR (4)</u> questions from the five questions <u>ONLY</u>.

1.   List the possible physical and neurological findings associated with **three (3)** of the following neurological lesions in dogs and cats: *(3⅓ marks each)*

   a) C6 - T2 spinal cord lesion
   b) left cerebral hemisphere lesion
   c) bilateral trigeminal nerve lesion
   d) paralysis due to *Ixodes holocyclus* toxin.

2.   Answer **all** subparts of this question:

   a) Explain the pathogenesis of canine pancreatitis. Include in your answer an explanation of how the normal pancreas is protected from autodigestion.
      (5 marks)
   b) Discuss the known risk factors for canine pancreatitis.   *(5 marks)*

3.   Discuss the use of **two (2)** of the following diagnostic tests; your discussion should include a brief description of the test in relation to the disease process listed, the indications and limitations of each test and the interpretation of results:
      (5 marks each)

   a) Total T4 assay for canine hypothyroidism
   b) Urine protein:creatinine ratio for protein-losing nephropathy
   c) Fructosamine assay for feline diabetes mellitus

Examination continued on next page

4.   For **three (3)** of the following paraneoplastic syndromes, describe the pathophysiological mechanisms by which the syndrome occurs and list the most commonly associated neoplasms: *(3⅓ marks each)*

a) gastroduodenal ulceration

b) hypoglycaemia

c) hypergammaglobulinaemia

d) thrombocytopenia.

5.   Answer **all s**ubparts of this question:

a) Describe the pathophysiology of feline infectious peritonitis (FIP).   *(5 marks)*

b) Describe the pathophysiology of tetanus.   *(5 marks)*

End of paper

Australian College of Veterinary Scientists

Membership Examination

June 2011

Small Animal Medicine

Paper 2

Perusal time: **Fifteen (15)** minutes

Time allowed: **Two (2)** hours after perusal

Answer your choice of **FOUR (4)** questions from the five questions **ONLY**

All five main questions are of equal value

In some questions you must choose which subparts to answer

Answer **FOUR** questions each worth 10 marks .... total 40 marks

Paper 2: Small Animal Medicine

Answer your choice of any <u>FOUR (4)</u> questions from the five questions <u>ONLY.</u>

1.   A six-year-old male neutered Doberman dog is presented in respiratory distress, with a heart rate of 240 beats per minute, a chaotic heart rhythm, respiratory rate of 80 breaths per minute and a poor pulse amplitude. Mucous membrane colour is mildly cyanotic. Chest radiographs reveal marked pulmonary oedema. An ECG reveals atrial fibrillation with a heart rate of 240 beats per minute. Echocardiography reveals very poor contractility and a dilated left atrium (6 cm).

     Answer **all s**ubparts of this question:

     a) Outline your initial stabilisation of this patient to the point of discharge, justifying your management decisions.   *(5 marks)*

     b) State **three (3)** drugs you would recommend discharging this dog with for longer term management, and outline the mechanism of action and any potential adverse effects of each.   *(5 marks)*

2.   Outline your diagnostic approach to **two (2)** of the following; include in your answer reference to major differential diagnoses: *(5 marks each)*

     a) prostatomegaly in a nine-year-old entire male schnauzer

     b) unilateral mucopurulent nasal discharge in a ten-year-old domestic short-haired cat

     c) splenomegaly in a five-year-old female neutered labrador.

3.   A six-year-old female, spayed domestic short-haired cat presents to your clinic with a three-day history of lethargy and inappetence. On basic physical examination, you detect an elevated temperature (40.1° C). The cat resents cranial abdominal palpation. You decide to take blood and urine via cystocentesis, and submit them for biochemistry, haematology and urinalysis. The results are shown below:

Question 3 continued on next page

Haemogram

Parameter	Value	Units	Reference range
Haemoglobin	110	g/L	80-150
PCV	0.35	%	0.2-0.45
RBC	7.1	x10^{12}/L	5.0-10.0
Reticulocytes	0	x10^9/L	
WBC	18.5	x10^9/L	5.5-19.5
Neutrophils	**15.73**	**x10^9/L**	**2.4-12.5**
Band neutrophils	0.5	x10^9/L	
Lymphocytes	**1.48**	**x10^9/L**	**1.5-7.0**
Monocytes	**0.93**	**x10^9/L**	**0.0-0.9**
Eosinophils	0.37	x10^9/L	0.0-1.5
Basophils	0	x10^9/L	<0.2
Platelets	248	x10^9/L	200-900
Morphology	An occasional neutrophil shows mild toxic change		

Biochemistry

Parameter	Value	Units	Reference range
Sodium	156	mmol/L	147-156
Potassium	3.6	mmol/L	3.5-5.0
BUN	7.0	mmol/L	6.0-11.8
Creatinine	82	μmol/L	80-178
Glucose	**8.1**	**mmol/L**	**3.9-6.1**
Total bilirubin	**15**	**μmol/L**	**0-5**
ALT	150	U/L	0-100
ALP	**190**	**U/L**	**0-85**
Total protein	75	g/L	54-78
Albumin	35	g/L	21-38
Globulin	40	g/L	26-51
Calcium	2.19	mmol/L	1.81-2.70
Phosphate	1.41	mmol/L	1.3-2.8
Cholesterol	2.4	mmol/L	1.9-3.9

Question 3 continued on next page

Urinalysis

SG	1.050
pH	6
Glucose	Negative
Ketones	Negative
Bilirubin	Negative
Protein	Negative
Haemoglobin	Negative
WBCs	Negative
RBCs	Negative
Casts	Negative
Bacteria	Negative

Answer **all** subparts of this question:

    a) Provide a prioritised list of differential diagnoses; given the history, physical examination findings and clinical pathology information presented above.

(4 marks)

    b) Discuss your diagnostic approach to this case, including your justification for any diagnostic tests to be performed. *(6 marks)*

4. Discuss the medical management of hepatic encephalopathy in a four-month-old Yorkshire terrier puppy, justifying your treatment choices with reference to the pathophysiology of this condition. *(10 marks)*

5. You are presented with a three-year-old female, spayed standard poodle. For the last three days she has been anorexic and lethargic. The owner has seen her vomit once 24 hours ago but hasn't seen her defaecate.

On clinical examination, the dog is quiet but responsive. Her temperature is 37.3ºC. Her heart rate is 90 beats per minute and respiratory rate is 20 breaths per minute. You estimate that she is 8% dehydrated. There are no other significant findings.

You run some blood tests in-house and obtain a urine sample by cystocentesis. The results are tabulated below.

Question 5 continued on next page

Haemogram

Parameter	Value	Units	Reference range
Haemoglobin	138	g/L	115-180
PCV	0.39	%	0.37-0.55
RBC	5.9	x10^{12}/L	5.0-8.0
Reticulocytes	0	x10^9/L	
WBC	8.9	x10^9/L	6.0-14.0
Neutrophils	5.1	x10^9/L	4.1-9.4
Band neutrophils	0	x10^9/L	
Lymphocytes	2.7	x10^9/L	0.9-3.6
Monocytes	0.5	x10^9/L	0.2-1.0
Eosinophils	**1.8**	**x10^9/L**	**0.1-1.2**
Basophils	0	x10^9/L	<0.2
Platelets	248	x10^9/L	200-900
Morphology	Normal		

Biochemistry

Parameter	Value	Units	Reference range
Sodium	**135**	**mmol/L**	**140-155**
Potassium	**7.7**	**mmol/L**	**3.8-5.8**
BUN	**17.9**	**mmol/L**	**2.5-9.6**
Creatinine	**250**	**μmol/L**	**44-159**
Glucose	4.5	mmol/L	4.11-7.94
Total bilirubin	2	μmol/L	0-15
ALT	78	U/L	10-100
ALP	99	U/L	23-212
Total protein	65	g/L	54-82
Albumin	35	g/L	23-40
Globulin	30	g/L	25-45
Calcium	2.6	mmol/L	2.0-2.8
Phosphate	1.8	mmol/L	0.8-2.0
Cholesterol	4.42	mmol/L	2.84-8.27

Question 5 continued on next page

Urinalysis

SG	1.018
pH	6
Glucose	Negative
Ketones	Negative
Bilirubin	Negative
Protein	Negative
Haemoglobin	Negative
WBCs	Negative
RBCs	Negative
Casts	Negative
Bacteria	Negative

Answer **all** subparts of this question:

a) Provide a problem list for this case.   *(1½ marks)*

b) Indicate your most likely differential diagnosis for this case and briefly justify your answer.   *(2 marks)*

c) Explain what further diagnostic test(s) is/are indicated. Justify your answer.
   (1½ marks)

d) Discuss your management of this case in the first 48 hours, assuming your most likely differential diagnosis is confirmed after 24 hours.   *(5 marks)*

End of paper